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# National Cooperative Dairy Herd Improvement Program



A plan for every size herd

OFFICIAL DHIA

OWNER SAMPLER

WEIGH-A-DAY-A-MONTH

AGRICULTURAL RESEARCH SERVICE, U. S. DEPARTMENT OF AGRICULTURE

Dairy-Herd-Improvement Letter

ARS-44-210

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## DHIA PARTICIPATION REPORT 1/ January 1, 1969

The National Cooperative Dairy Herd Improvement Program is a composite of the Official DHI 2/ (including DHIR), Owner-Sampler, and Weigh-a-Day-a-Month recordkeeping plans. On January 1, 1969, the Program included 60,684 herds consisting of 3,025,414 cows on test, which is 23.2 percent of the Nation's dairy cow population. These figures represent an increase of 0.8 percent of cows on test, a decrease of 2,853 cows, and a decrease of 2,195 herds during the year. Table 1 presents these data and also includes 4,654 herds and 170,756 cows on other testing programs such as Vocational Agriculture, commercial, and private.

Each of the 50 States and Puerto Rico are represented in the total program that includes 1,289 associations and 2,250 supervisors. The participation reports for all testing programs and for the Official DHI, Owner-Sampler, and Weigh-a-Day-a-Month plans are shown in tables 1, 2, 3, and 4, respectively.

1/ Prepared by F. N. Dickinson, B. T. McDaniel, C. A. Rampendahl, and J. J. Corbin from data supplied by the State Extension Dairymen in Charge of DHIA Testing.

2/ The Official DHI plan was previously designated as Standard DHIA plan.

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On January 1, 1969, 1,252 fewer herds and 7,024 more cows were on Official DHI test than in the previous year. Average herd size was 60.1 cows, an increase of 2.3 cows per herd over the previous year.

On January 1, 1969, 784 fewer herds and 5,155 fewer cows were on the Owner-Sampler test than in the previous year. Average herd size was 34.6 cows. Wisconsin had 43.9 percent of the Owner-Sampler enrollment. The Weigh-a-Day-a-Month plan had 708 herds consisting of 44,131 cows. Average herd size for this plan was 62.3 cows.

Electronic data processing at State and regional DHIA centers continues to advance as shown in table 5. Electronic processing of Official DHI plan records (including DHIR) has reached 100 percent in 44 States. In the United States, it includes 96.1 percent of the herds and 86.9 percent of the cows on Official DHI. The corresponding values for records of the three plans combined are 91.4 and 86.0 percent, respectively.

The present status and changes since 1906 in Official DHI enrollment are shown in table 6. The number of cows in the program has about doubled since 1950, although the number of herds tested continues to decrease.

Table 7 is a 13-year summary of the production of Official DHI and all U.S. dairy cows. Table 8 shows that the proportion of cows participating in the total DHIA program increased from 9.3 percent in 1956 to 23.2 percent in 1968.

A list of the 256 counties that have 40 percent or more of their dairy cows on one or more of the recordkeeping plans is shown in table 9. Twenty-one percent of the counties have 25 percent or more of their dairy cattle enrolled in one or more recordkeeping plans.

On the last page is an updated list of Extension Dairymen in charge of production testing from information supplied by each State.

## LACTATION RECORDS REPORTED IN 1968

In 1968, 1,916,831 Official DHI lactation records were reported to USDA for use in statistical summaries, genetic appraisals, and research. This is 65,557 more than were reported in 1967. Of these, 97.6 percent were reported on magnetic tape and 2.4 percent on punched cards. The records reported by State are summarized in table 10.

Since 1958, the number of cows enrolled in Official DHI has increased 38 percent, while the number of lactation records reported to the USDA has increased 144 percent. As a result, the proportion of cows on test having reported records has increased from 51 to 90 percent since 1958. This more complete reporting is attributed largely to the continued development of central processing of Official DHI records. An 11-year summary of the records reported since 1958 is shown in table 11.

## LACTATION RECORD REJECTS

About 4.8 percent of the lactation records submitted in 1968 were rejected because the editing procedure revealed they contained invalid, conflicting, or questionable data.

The types and frequencies of discrepancies that were noted in the preliminary screening of lactation records are shown in table 12. The major problem is the lack of identification on sires and dams of registered cows, resulting in more than 6,500 discrepancies. In 3,400 records the breed codes of cows with registration numbers were different from those of their sires or dams. Care in following the uniform eartag series numbers or in reporting all identification on registered cows will greatly reduce the number of records that are screened for such errors as those above. It will also reduce the effort made by farmers, DHIA, and Dairy Records Processing Centers to correct these mistakes. Another major problem was zero reported for sire and dam breed.

Reasons for rejecting records in the main USDA edit and the number of records so affected are shown in table 13.

Over 70,000 records were rejected; the major problems were conflicting calving dates between two or more lactations of the same cow, conflicting birth dates between two daughters of the same dam, inconsistency with previous identification supplied (sire, dam, or birth date), and improper cow, sire, or dam numbers. A substantial portion of the rejected records had errors in more than one field because more than 75,000 error conditions were recognized.

The material in table 13 is based only on registered cows or grade cows for which sires were reported. Thus, it appears that the error rate in records identified by sire is near 8 percent, because a substantial number of lactation records continue to be reported without sire identification.

You may note that most of the tables show error conditions rather than records in error. This results because records are edited for all remaining fields after the first conflict is found. The fact that error conditions exceed the number of rejected records indicates that many records continue to contain more than one error.

Table 14 shows the density of the National Cooperative Dairy Herd Improvement program percentage of cows in program January 1, 1969. The top five ranking States were California, Nevada, South Carolina, Arizona, and Connecticut.

TABLE 1.--The National Cooperative Dairy Herd Improvement Program and other testing programs (January 1, 1969)

State	Counties	Asso- ciations	Super- visors	Official DH		Owner-Sampler		Weigh-a-Day- a-Month		Total		Milk cows in U.S.		
				Herds	Cows	Herds	Cows	Herds	Cows	Herds	Cows	Total 1/	In all plans	
	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number	Thousands	Percent	
Ala-----	51	22	25	308	32,277	5	360	7	509	320	33,146	143	23.2	
Alaska---	2	1	2	5	232	6	287	---	---	11	519	1.8	28.8	
Ariz-----	5	4	8	90	20,574	---	---	---	---	90	20,574	51	40.3	
Ark-----	31	14	20	95	5,098	112	4,122	5	150	212	9,370	102	9.2	
Calif----	45	30	114	1,711	363,627	120	6,930	---	---	1,831	370,557	781	47.4	
Colo-----	20	13	19	259	18,496	23	1,029	---	---	282	19,525	99	19.7	
Conn----	8	7	22	370	23,560	66	2,729	4	349	440	26,638	67	39.8	
Del-----	3	3	4	82	4,661	7	185	3	58	92	4,904	15	32.7	
Fla-----	31	9	12	94	20,584	15	5,507	15	4,258	124	30,349	182	16.7	
Ga-----	95	29	30	380	31,507	7	562	44	4,955	431	37,024	139	26.6	
Hawaii--	3	1	2	12	3,032	3	878	---	---	15	3,910	13.5	29.0	
Idaho---	30	30	31	518	25,786	19	553	---	---	537	26,339	156	16.9	
Ill-----	86	54	76	1,311	57,483	342	11,635	186	6,647	1,839	75,765	330	23.0	
Ind-----	78	54	71	968	39,409	310	12,642	---	---	1,278	52,051	252	20.7	
Iowa----	97	72	104	1,686	62,113	1,276	35,089	3	50	2,965	97,252	569	17.1	
Kans----	86	51	54	800	39,640	150	5,233	4	100	954	44,973	212	21.2	
Ky-----	67	36	42	511	23,733	39	1,612	13	1,019	563	26,364	367	7.2	
La-----	35	25	27	116	10,549	2	127	169	11,489	287	22,165	180	12.3	
Maine----	16	13	24	362	17,905	84	3,357	---	---	446	21,262	69	30.8	
Md-----	17	17	32	641	41,040	74	3,292	---	---	715	44,332	170	26.1	
Mass----	11	10	21	418	20,032	60	1,924	---	---	478	21,956	69	31.8	
Mich----	80	55	91	1,571	79,632	1,281	46,969	---	---	2,852	126,601	473	26.8	
Minn----	84	77	199	3,388	123,790	2,407	70,922	---	---	5,795	194,712	1,057	18.4	
Miss----	51	19	26	282	22,907	6	511	15	946	303	24,364	209	11.7	
Mo-----	75	44	56	548	29,323	207	7,716	---	---	755	37,039	380	9.7	
Mont----	16	6	7	81	5,090	36	3,310	---	---	117	8,400	46	18.3	
Nebr----	59	31	35	405	19,338	75	2,810	37	927	517	23,075	210	11.0	
Nev-----	6	2	2	61	4,748	2	1,408	---	---	63	6,156	13.7	44.9	
N. H----	10	9	15	217	10,313	57	2,078	10	570	284	12,961	39	33.2	
N. J----	11	8	21	356	22,488	55	5,647	---	---	411	28,135	79	35.6	
N. Mex--	9	5	6	28	6,790	4	2,014	---	---	32	8,804	38	23.2	
N. Y----	49	43	180	3,562	188,007	2,342	91,797	---	---	5,904	279,804	1,039	26.9	
N. C----	82	42	55	748	50,377	40	1,728	44	2,229	832	54,334	193	28.2	
N. Dak--	39	14	16	151	6,271	24	650	17	635	192	7,556	156	4.8	
Ohio----	84	73	141	2,012	88,729	1,269	38,827	---	---	3,281	127,556	475	26.9	
Okla----	52	15	17	295	19,188	50	2,531	2	70	347	21,789	155	14.1	
Oreg----	25	15	22	345	26,600	100	3,920	---	---	445	30,520	113	27.0	
Pa-----	60	60	167	3,584	157,838	1,293	43,040	---	---	4,877	200,878	728	27.6	
P. R----	7	1	1	7	1,007	---	---	25	5,132	32	6,139	---	---	
R. I----	4	2	3	41	1,908	---	---	---	---	41	1,908	8.1	23.6	
S. C----	36	24	25	275	29,261	3	152	5	153	283	29,566	72	41.1	
S. Dak--	48	20	21	162	6,914	411	13,225	---	---	573	20,139	202	10.0	
Tenn----	68	36	35	497	30,840	5	202	31	1,322	533	32,364	329	9.8	
Tex----	84	23	27	328	33,402	27	1,520	14	1,008	369	35,930	365	9.8	
Utah----	19	16	17	401	22,318	25	1,031	---	---	426	23,349	75	31.1	
Vt-----	14	27	53	710	38,335	591	26,649	1	50	1,302	65,034	209	31.1	
Va-----	79	38	50	944	63,789	53	2,272	8	274	1,005	66,335	231	28.7	
Wash----	29	22	44	633	42,714	39	1,531	---	---	672	44,245	186	23.8	
W. Va----	27	12	17	180	9,661	21	737	46	1,231	247	11,629	67	17.4	
Wis----	70	50	156	3,030	134,594	11,192	370,065	---	---	14,222	504,659	1,887	26.7	
Wyo----	8	5	5	38	1,443	24	1,015	---	---	62	2,458	19.5	12.6	
Total or percent:														
The Natl. Coop.DHI Program	2,102	1,289	2,250	35,617	2,138,953	24,359	842,330	708	44,131	60,684	3,025,414	13,022	23.2	
All testing programs	2/	---	---	---	---	---	---	---	---	65,338	3,196,170	---	24.5	

1/ Preliminary figures for average number of milk cows on farms during year, excluding heifers not yet fresh; estimated by the Statistical Reporting Service (USDA).

2/ The following number of herds and cows are on other testing programs such as Vocational Agriculture, commercial, private, etc., by State: Arizona, 40 herds, 8,540 cows; California, 69 herds, 12,383 cows; Colorado, 22 herds, 2,029 cows; Connecticut, 20 herds, 2,000 cows; Iowa, 300 herds, 5,000 cows; Michigan, 262 herds, 9,774 cows; New York, 32 herds, 1,614 cows; North Dakota, 78 herds, 1,594 cows; Pennsylvania, 570 herds, 24,510 cows; South Carolina, 2 herds, 139 cows; Washington, 22 herds, 2,826 cows; Wisconsin, 3,237 herds, 100,347 cows. Total = 4,654 herds, 170,756 cows.

TABLE 2.--Official DHI recordkeeping in the United States (January 1, 1969)

State	Counties	Herds	Cows	Change from 1-1-68	Av. cows per herd	All milk cows 1/	DHI cows as pct. of all milk cows 2/	Change from 1-1-68
	Number	Number	Number	Number	Number	Thousands	Percent	Percent
Ala-----	50	308	32,277	+172	104.8	143	22.6	+1.2
Alaska-----	2	5	232	+36	46.4	1.8	12.9	+2.6
Ariz-----	5	90	20,574	+6,269	228.6	51	40.3	+12.3
Ark-----	13	95	5,098	+723	53.7	102	5.0	+0.9
Calif-----	44	1,711	363,627	-7,602	212.5	781	46.6	-.9
Colo-----	20	259	18,496	-773	71.4	99	18.7	-1.0
Conn-----	8	370	23,560	+883	63.7	67	35.2	+2.3
Del-----	3	82	4,661	+425	56.8	15	31.1	+4.6
Fla-----	31	94	20,584	-494	219.0	182	11.3	-.3
Ga-----	86	380	31,507	+389	82.9	139	22.7	+1.1
Hawai-----	1	12	3,032	-1,290	252.7	13.5	22.5	-7.5
Idaho-----	29	518	25,786	+3,298	49.8	156	16.5	+2.1
Ill-----	81	1,311	57,483	-551	43.8	330	17.4	+1.2
Ind-----	78	968	39,409	-4,350	40.7	252	15.6	-.6
Iowa-----	96	1,686	62,113	+1,357	36.8	569	10.9	+1.1
Kans-----	86	800	39,640	+1,478	49.6	212	18.7	+1.4
Ky-----	62	511	23,733	+236	46.4	367	6.5	+.3
La-----	25	116	10,549	+2,193	90.9	180	5.9	+1.5
Maine-----	16	362	17,905	-877	49.5	69	25.9	-.2
Md-----	17	641	41,040	-674	64.0	170	24.1	+.1
Mass-----	11	418	20,032	+2	47.9	69	29.0	+1.9
Mich-----	70	1,571	79,632	+1,574	50.7	473	16.8	+1.0
Minn-----	84	3,388	123,790	+4,767	36.5	1,057	11.7	+.8
Miss-----	48	282	22,907	+1,019	81.2	209	11.0	+1.1
Mo-----	73	548	29,323	+3,111	53.5	380	7.7	+1.1
Mont-----	11	81	5,090	+774	62.8	46	11.1	+2.3
Nebr-----	54	405	19,338	+542	47.7	210	9.2	+.8
Nev-----	6	61	4,748	-1,632	77.8	13.7	34.7	-12.6
N. H-----	10	217	10,313	-2,701	47.5	39	26.4	-4.6
N. J-----	10	356	22,488	-1,504	63.2	79	28.5	+.6
N. Mex-----	9	28	6,790	-126	242.5	38	17.9	-.3
N. Y-----	49	3,562	188,007	+1,496	52.8	1,039	18.1	+.7
N. C-----	82	748	50,377	+476	67.3	193	26.1	+1.1
N. Dak-----	35	151	6,271	+369	41.5	156	4.0	+.6
Ohio-----	83	2,012	88,729	-2,249	44.1	475	18.7	+.4
Okla-----	52	295	19,188	+2,178	65.0	155	12.4	+1.7
Oreg-----	25	345	26,600	+2,405	77.1	113	23.5	+2.8
Pa-----	60	3,584	157,838	-20,365	44.0	728	21.7	-2.3
P. R-----	7	7	1,007	+187	143.9	---	----	----
R. I-----	4	41	1,908	-322	46.5	8.1	23.6	-1.7
S. C-----	35	275	29,261	+2,870	106.4	72	40.6	+5.4
S. Dak-----	28	162	6,914	+1,310	42.7	202	3.4	+.7
Tenn-----	62	497	30,840	-171	62.1	329	9.4	+.5
Tex-----	76	328	33,402	+926	101.8	365	9.2	+.7
Utah-----	19	401	22,318	+1,211	55.7	75	29.8	+2.0
Vt-----	13	710	38,335	-786	54.0	209	18.3	+.2
Va-----	77	944	63,789	+833	67.6	231	27.6	+1.5
Wash-----	29	633	42,714	+5,466	67.5	186	23.0	+3.9
W. Va-----	21	180	9,661	+1,294	53.7	67	14.4	+2.9
Wis-----	68	3,030	134,594	+3,351	44.4	1,887	7.1	+.3
Wyo-----	8	38	1,443	-129	38.0	19.5	7.4	-.3
Total, average, or percent--	1,972	35,617	2,138,953	+7,024	60.1	13,022	16.4	+.6

1/ Preliminary figures for average number of milk cows on farms during year, excluding heifers not yet fresh; estimated by the Statistical Reporting Service (USDA).

2/ Percentage of cows included in the Official DHI (including DHIR) recordkeeping plan.

TABLE 3.--Owner-Sampler recordkeeping in the United States (January 1, 1969)

State	Counties	Herds	Cows	Change from 1-1-68	Av. cows per herd	All milk cows 1/	O.S. cows as pct. of all milk cows 2/	Change from 1-1-68
	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Number</u>	<u>Thousands</u>	<u>Percent</u>	<u>Percent</u>
Ala-----	4	5	360	-127	72.0	143	0.3	0
Alaska-----	1	6	287	+152	47.8	1.8	15.9	+8.8
Ariz-----	--	---	---	-7,003	---	51	---	-13.7
Ark-----	21	112	4,122	+962	36.8	102	4.0	+1.1
Calif-----	22	120	6,930	-7,140	57.8	781	.9	-0.9
Colo-----	7	23	1,029	-493	44.7	99	1.0	-.6
Conn-----	8	66	2,729	+120	41.3	67	4.1	+.3
Del-----	2	7	185	-68	26.4	15	1.2	-.4
Fla-----	10	15	5,507	+3,527	367.1	182	3.0	+1.9
Ga-----	4	7	562	0	80.3	139	.4	0
Hawaii-----	2	3	878	+233	292.7	13.5	6.5	+2.0
Idaho-----	12	19	553	+71	29.1	156	.4	+.1
Ill-----	28	342	11,635	-194	34.0	330	3.5	+.2
Ind-----	29	310	12,642	-1,314	40.8	252	5.0	-.2
Iowa-----	91	1,276	35,089	-1,313	27.5	569	6.2	+.3
Kans-----	39	150	5,233	+817	34.9	212	2.5	+.5
Ky-----	20	39	1,612	+129	41.3	367	.4	0
La-----	2	2	127	-174	63.5	180	.1	-.1
Maine-----	10	84	3,357	-325	40.0	69	4.9	-.2
Md-----	8	74	3,292	+17	44.5	170	1.9	0
Mass-----	8	60	1,924	-559	32.1	69	2.8	-.6
Mich-----	73	1,281	46,969	-2,126	36.7	473	9.9	0
Minn-----	81	2,407	70,922	+7,345	29.5	1,057	6.7	+.9
Miss-----	6	6	511	+19	85.2	209	.2	0
Mo-----	43	207	7,716	+1,857	37.3	380	2.0	+.5
Mont-----	11	36	3,310	+768	91.9	46	7.2	+2.0
Nebr-----	22	75	2,810	-390	37.5	210	1.3	-.1
Nev-----	2	2	1,408	+263	704.0	13.7	10.3	+1.8
N. H-----	9	57	2,078	-481	36.5	39	5.3	-.8
N. J-----	9	55	5,647	+1,876	102.7	79	7.1	+2.7
N. Mex-----	2	4	2,014	+241	503.5	38	5.3	+.6
N. Y-----	48	2,342	91,797	-3,001	39.2	1,039	8.8	-.1
N. C-----	17	40	1,728	+199	43.2	193	.9	+.1
N. Dak-----	13	24	650	-110	27.1	156	.4	0
Ohio-----	77	1,269	38,827	-2,591	30.6	475	8.2	-.1
Okla-----	25	50	2,531	-465	50.6	155	1.6	-.3
Oreg-----	21	100	3,920	-510	39.2	113	3.5	-.3
Pa-----	60	1,293	43,040	+3,185	33.3	728	5.9	+.5
P. R-----	--	---	---	---	---	---	---	---
R. I-----	--	---	---	---	8.1	---	---	---
S. C-----	2	3	152	+40	50.7	72	.2	+.1
S. Dak-----	57	411	13,225	+3,125	32.2	202	6.5	+1.7
Tenn-----	4	5	202	-29	40.4	329	.1	0
Tex-----	14	27	1,520	-43	56.3	365	.4	0
Utah-----	3	25	1,031	-9	41.2	75	1.4	0
Vt-----	13	591	26,649	-44	45.1	209	12.8	+.4
Va-----	16	53	2,272	-113	42.9	231	1.0	0
Wash-----	15	39	1,531	+323	39.3	186	.8	+.2
W. Va-----	7	21	737	-316	35.1	67	1.1	-.3
Wis-----	70	11,192	370,065	-1,787	33.1	1,887	19.6	+.4
Wyo-----	3	24	1,015	+301	42.3	19.5	5.2	+1.7
Total, average, or percent--	1,051	24,359	842,330	-5,155	34.6	13,022	6.5	+.2

1/ Preliminary figures for average number of milk cows on farms during year, excluding heifers not yet fresh; estimated by the Statistical Reporting Service (USDA).

2/ Percentage of cows included in the Owner-Sampler recordkeeping plan.

TABLE 4.--Weigh-a-Day-a-Month recordkeeping in the United States (January 1, 1969)

State	Counties	Herds	Cows	Change from 1-1-68	Av. cows per herd	All milk cows <u>1/</u>	WADAM cows as pct. of all milk cows <u>2/</u>	Change from 1-1-68
	Number	Number	Number	Number	Number	Thousands	Percent	Percent
Ala-----	5	7	509	-422	72.7	143	0.4	-0.2
Alaska-----	--	--	-----	-----	-----	1.8	---	---
Ariz-----	--	--	-----	-----	-----	51	---	---
Ark-----	5	5	150	-250	30.0	102	.1	-.3
Calif-----	--	--	-----	-----	-----	781	---	---
Colo-----	--	--	-----	-----	-----	99	---	---
Conn-----	1	4	349	-100	87.3	67	.5	-.2
Del-----	1	3	58	+2	19.3	15	.4	0
Fla-----	8	15	4,258	-60	283.9	182	2.3	-.1
Ga-----	27	44	4,955	-1,591	112.6	139	3.6	-.9
Hawaii-----	--	--	-----	-----	-----	13.5	---	---
Idaho-----	--	--	-----	-----	-----	156	---	---
Ill-----	39	186	6,647	-294	35.7	330	2.0	+.1
Ind-----	--	--	-----	-----	-----	252	---	---
Iowa-----	2	3	50	+5	16.7	569	---	---
Kans-----	1	4	100	-452	25.0	212	---	-.2
Ky-----	5	13	1,019	-489	78.4	367	.3	-.1
La-----	23	169	11,489	-1,573	68.0	180	6.4	-.5
Maine-----	--	--	-----	-----	-----	69	---	---
Md-----	--	--	-----	-----	-----	170	---	---
Mass-----	--	--	-----	-----	-----	69	---	---
Mich-----	--	--	-----	-----	-----	473	---	---
Minn-----	--	--	-----	-----	-----	1,057	---	---
Miss-----	5	15	946	-381	63.1	209	.5	-.1
Mo-----	--	--	-----	-----	-----	380	---	---
Mont-----	--	--	-----	-----	-----	46	---	---
Nebr-----	17	37	927	-23	25.1	210	.4	0
Nev-----	--	--	-----	-----	-----	13.7	---	---
N. H-----	3	10	570	+243	57.0	39	1.5	+.7
N. J-----	--	--	-----	-----	-----	79	---	---
N. Mex-----	--	--	-----	-----	-----	38	---	---
N. Y-----	--	--	-----	-----	-----	1,039	---	---
N. C-----	22	44	2,229	-714	50.7	193	1.2	-.3
N. Dak-----	12	17	635	-7	37.4	156	.4	0
Ohio-----	--	--	-----	-----	-----	475	---	---
Okla-----	2	2	70	0	35.0	155	---	---
Oreg-----	--	--	-----	-----	-----	113	---	---
Pa-----	--	--	-----	-----	-----	728	---	---
P. R-----	19	25	5,132	+1,598	205.3	-----	---	---
R. I-----	--	--	-----	-----	-----	8.1	---	---
S. C-----	3	5	153	-109	30.6	72	.2	-.1
S. Dak-----	--	--	-----	-----	-----	202	---	---
Tenn-----	6	31	1,322	+8	42.6	329	.4	0
Tex-----	6	14	1,008	+212	72.0	365	.3	+.1
Utah-----	--	--	-----	-----	-----	75	---	---
Vt-----	1	1	50	0	50.0	209	---	---
Va-----	4	8	274	-222	34.3	231	.1	-.1
Wash-----	--	--	-----	-----	-----	186	---	---
W. Va-----	16	46	1,231	-103	26.8	67	1.8	0
Wis-----	--	--	-----	-----	-----	1,887	---	---
Wyo-----	--	--	-----	-----	-----	19.5	---	---
Total, average, or percent--	233	708	44,131	-4,722	62.3	13,022	.3	-.1

1/ Preliminary figures for average number of milk cows on farms during year, excluding heifers not yet fresh; estimated by the Statistical Reporting Service (USDA).

2/ Percentage of cows included in the Weigh-a-Day-a-Month recordkeeping plan.

TABLE 5.--Herds and cows enrolled in State and regional computing centers (January 1, 1969)

State	Official DHI (incl. DHIR)				Dairy Herd Improvement Registry		Owner-Sampler		Total machine processing 1/		Machine processing as percent of total recordkeeping 1/	
	Herds	Cows	Herds	Cows	Herds	Cows	Herds	Cows	Herds	Cows	Herds	Cows
	Number	Number	Pct. 2/	Pct. 2/	Number	Number	Number	Number	Number	Pct.	Number	Pct.
Ala-----	308	32,277	100.0	100.0	14	1,306	5	360	317	32,932	99.1	99.4
Alaska---	5	232	100.0	100.0	2	49	6	287	11	519	100.0	100.0
Ariz-----	53	9,754	58.9	47.4	18	3,115	-----	-----	53	9,754	58.9	47.4
Ark-----	95	5,098	100.0	100.0	16	793	112	4,122	207	9,220	97.6	98.4
Calif---	379	98,046	22.2	27.0	101	24,769	7	556	386	98,602	21.1	26.6
Colo-----	259	18,496	100.0	100.0	40	1,603	23	1,029	282	19,525	100.0	100.0
Conn-----	370	23,560	100.0	100.0	58	3,910	66	2,729	440	26,638	100.0	100.0
Del-----	82	4,661	100.0	100.0	8	515	7	185	89	4,846	96.7	98.8
Fla-----	94	20,584	100.0	100.0	6	1,127	14	5,385	108	25,969	87.1	85.6
Ga-----	380	31,507	100.0	100.0	26	2,845	7	562	417	35,682	96.8	96.4
Hawaii---	12	3,032	100.0	100.0	-----	-----	3	878	15	3,910	100.0	100.0
Idaho---	509	25,312	98.3	98.2	32	1,505	19	553	528	25,865	98.3	98.2
Ill-----	1,311	57,483	100.0	100.0	139	6,290	244	8,382	1,666	70,070	90.6	92.5
Ind-----	968	39,409	100.0	100.0	166	6,474	75	2,480	1,043	41,889	81.6	80.5
Iowa-----	1,686	62,113	100.0	100.0	213	7,910	1,176	32,550	2,862	94,663	96.5	97.3
Kans-----	800	39,640	100.0	100.0	112	5,698	150	5,233	950	44,873	99.6	99.8
Ky-----	511	23,733	100.0	100.0	49	2,366	39	1,612	563	26,364	100.0	100.0
La-----	113	10,025	97.4	95.0	9	990	2	127	284	21,641	99.0	97.6
Maine-----	362	17,905	100.0	100.0	59	3,176	84	3,357	446	21,262	100.0	100.0
Md-----	641	41,040	100.0	100.0	94	7,127	74	3,292	715	44,332	100.0	100.0
Mass-----	418	20,032	100.0	100.0	85	4,195	55	1,793	473	21,825	99.0	99.4
Mich-----	1,571	79,632	100.0	100.0	151	9,621	1,281	46,969	2,852	126,601	100.0	100.0
Minn-----	3,388	123,790	100.0	100.0	180	7,240	2,270	66,758	5,658	190,548	97.6	97.9
Miss-----	282	22,907	100.0	100.0	23	1,818	6	511	293	23,814	96.7	97.7
Mo-----	548	29,323	100.0	100.0	80	4,590	207	7,716	755	37,039	100.0	100.0
Mont-----	81	5,090	100.0	100.0	8	560	36	3,310	117	8,400	100.0	100.0
Nebr-----	405	19,338	100.0	100.0	49	3,198	75	2,810	480	22,148	92.8	96.0
Nev-----	40	2,344	65.6	49.4	13	735	2	1,408	42	3,752	66.7	60.9
N. H-----	217	10,313	100.0	100.0	50	2,546	57	2,078	284	12,961	100.0	100.0
N. J-----	356	22,488	100.0	100.0	48	3,473	55	5,647	411	28,135	100.0	100.0
N. Mex---	28	6,790	100.0	100.0	9	2,683	1	82	29	6,872	90.6	78.1
N. Y-----	3,562	188,007	100.0	100.0	324	17,621	2,222	86,880	5,784	274,887	98.0	98.2
N. C-----	748	50,377	100.0	100.0	64	5,152	40	1,728	832	54,334	100.0	100.0
N. Dak-----	150	5,811	99.3	92.7	15	605	23	630	188	6,846	97.9	90.6
Ohio-----	2,012	88,729	100.0	100.0	375	17,867	458	14,426	2,470	103,155	75.3	80.9
Okla-----	295	19,188	100.0	100.0	47	2,799	50	2,531	345	21,719	99.4	99.7
Oreg-----	345	26,600	100.0	100.0	40	2,950	100	3,920	445	30,520	100.0	100.0
Pa-----	3,584	157,838	100.0	100.0	245	13,542	1,293	43,040	4,877	200,878	100.0	100.0
P. R-----	7	1,007	100.0	100.0	---	-----	-----	-----	32	6,139	100.0	100.0
R. I-----	41	1,908	100.0	100.0	19	689	-----	-----	41	1,908	100.0	100.0
S. C-----	275	29,261	100.0	100.0	45	5,898	3	152	283	29,566	100.0	100.0
S. Dak-----	162	6,914	100.0	100.0	24	1,119	327	10,500	489	17,414	85.3	86.5
Tenn-----	497	30,840	100.0	100.0	53	3,637	5	202	507	31,355	95.1	96.9
Tex-----	325	33,102	99.1	99.1	66	6,326	27	1,520	357	35,027	96.7	97.5
Utah-----	401	22,318	100.0	100.0	26	1,455	25	1,031	426	23,349	100.0	100.0
Vt-----	710	38,335	100.0	100.0	113	6,199	229	9,263	940	47,648	72.2	73.3
Va-----	944	63,789	100.0	100.0	89	6,725	53	2,272	1,005	66,335	100.0	100.0
Wash-----	633	42,714	100.0	100.0	90	6,410	39	1,531	672	44,245	100.0	100.0
W. Va-----	180	9,661	100.0	100.0	19	1,352	21	737	201	10,398	81.4	89.4
Wis-----	3,030	134,594	100.0	100.0	496	22,794	9,709	319,783	12,739	454,377	89.6	90.0
Wyo-----	38	1,443	100.0	100.0	5	220	24	1,015	62	2,458	100.0	100.0
Total or percent	34,211	1,858,390	96.1	86.9	4,013	245,587	20,806	713,922	55,471	2,603,209	91.4	86.0

1/ Includes WADAM testing: Alabama, 4 herds, 295 cows; Connecticut, 4 herds, 349 cows; Georgia, 30 herds, 3,613 cows; Illinois, 111 herds, 4,205 cows; Kentucky, 13 herds, 1,019 cows; Louisiana, 169 herds, 11,489 cows; Mississippi, 5 herds, 396 cows; New Hampshire, 10 herds, 570 cows; North Carolina, 44 herds, 2,229 cows; North Dakota, 15 herds, 405 cows; Puerto Rico, 25 herds, 5,132 cows; South Carolina, 5 herds, 153 cows; Tennessee, 5 herds, 313 cows; Texas, 5 herds, 405 cows; Vermont, 1 herd, 50 cows; Virginia, 8 herds, 274 cows. Total = 454 herds, 30,897 cows.

2/ Percent of Official DHI and DHIR herds or cows enrolled in machine processing.

TABLE 6.--Status of Dairy Herd Improvement Association work in the United States (1906-1969, inclusive)

Year	Associa- tions 1/	Super- visors 1/	Official DHI Plan								
			Herds	Cows	Cows per herd	Herds reported	Cows reported	Milk	Milk fat	Milk fat	
Number	Number	Number	Number	Number	Number	Number	Number	Pounds	Percent	Pounds	
1906--	1	---	31	239	7.7	---	---	5,300	4.06	215	
1907--	4	---	---	1,606	---	---	---	5,366	4.10	220	
1908--	6	---	---	3,921	---	---	---	---	---	---	
1909--	25	---	---	11,921	---	---	---	---	---	---	
1910--	40	---	---	2/25,000	---	---	---	2/5,730	3.96	2/227	
1911--	64	---	---	2/40,000	---	---	---	---	---	---	
1912--	82	---	---	2/43,000	---	---	---	---	---	---	
1913--	100	---	---	47,150	---	---	---	---	---	---	
1914--	163	---	---	73,280	---	---	---	---	---	---	
1915--	211	---	---	105,526	---	---	---	---	---	---	
1916--	346	---	---	150,677	---	---	---	---	---	---	
1917--	459	---	11,720	216,831	18.5	---	---	---	---	---	
1918--	353	---	9,778	172,518	17.6	---	---	---	---	---	
1919--	385	---	10,000	167,313	16.7	---	---	---	---	---	
1920--	468	---	11,948	203,472	17.0	---	---	6,175	4.00	247	
1921--	452	---	11,209	193,928	17.3	---	---	---	---	---	
1922--	513	---	12,508	215,321	17.2	---	---	---	---	---	
1923--	627	---	16,357	277,010	16.9	---	---	---	---	---	
1924 3/	---	---	---	---	---	---	---	---	---	---	
1925--	732	---	18,677	307,073	16.4	---	42,302	7,189	3.95	284	
1926--	777	---	19,540	327,653	16.8	---	103,443	7,331	3.96	290	
1927--	837	---	21,128	362,014	17.1	---	116,509	7,411	3.95	293	
1928--	947	---	23,327	414,891	17.8	---	152,412	7,476	3.96	296	
1929--	1,090	---	26,182	465,804	17.8	---	194,859	7,498	3.97	298	
1930--	1,143	---	27,888	507,549	18.2	---	235,624	7,642	3.96	303	
1931--	1,112	---	26,308	510,714	19.4	---	219,924	7,812	3.92	306	
1932--	1,005	---	20,351	427,044	21.0	---	186,683	7,858	3.95	310	
1933--	881	---	15,447	358,501	23.2	---	163,014	7,849	3.99	313	
1934--	793	---	13,694	325,837	23.8	---	203,930	8,015	4.02	322	
1935--	809	---	15,573	364,218	23.4	---	200,367	7,977	4.04	322	
1936--	876	---	17,344	404,412	23.3	---	257,248	7,912	4.03	319	
1937--	992	---	20,772	496,562	23.9	---	354,568	7,923	4.04	320	
1938--	1,106	---	23,701	558,993	23.6	---	448,025	7,831	4.05	317	
1939--	1,228	---	25,949	625,284	24.1	---	507,563	7,977	4.05	323	
1940--	1,300	---	27,948	676,141	24.2	---	545,382	8,133	4.07	331	
1941--	1,383	---	31,381	763,502	24.3	---	591,103	8,225	4.07	335	
1942--	1,421	---	32,957	816,117	24.8	---	514,758	8,323	4.07	339	
1943--	1,057	---	24,155	616,972	25.5	---	375,914	8,325	4.06	338	
1944--	954	---	20,825	561,587	27.0	---	383,337	8,296	4.05	336	
1945--	949	---	21,254	577,200	27.2	---	384,360	8,592	4.03	346	
1946--	1,124	---	23,331	627,878	27.0	---	413,554	8,635	4.04	349	
1947--	1,426	---	28,812	775,546	26.9	---	533,061	8,638	4.03	348	
1948--	1,668	---	33,274	886,129	26.6	---	620,385	8,675	4.03	350	
1949--	1,787	---	35,851	943,939	26.3	---	729,150	8,907	4.03	359	
1950--	1,973	---	40,100	1,088,872	27.2	---	836,922	9,172	4.03	370	
1951--	2,143	---	42,949	1,186,615	27.6	---	885,859	9,195	4.02	370	
1952--	2,109	---	40,105	1,166,297	29.1	---	928,376	9,192	3.98	366	
1953--	2,151	---	40,983	1,226,588	29.9	---	1,020,326	9,253	3.98	368	
1954--	2,175	---	41,254	1,311,698	31.8	---	1,079,557	9,363	3.97	372	
1955--	2,288	---	41,240	1,333,866	32.3	---	1,175,378	9,502	3.95	375	
1956--	2,266	---	40,984	1,406,306	34.4	---	1,229,971	9,713	3.94	383	
1957 4/	1,700	---	2,310	41,638	1,479,799	35.5	---	1,256,129	9,894	3.93	389
1958--	1,544	---	2,293	39,985	1,548,884	38.7	---	1,345,750	10,068	3.91	394
1959--	1,500	---	2,337	40,284	1,607,538	39.9	---	1,406,665	10,327	3.88	401
1960--	1,509	---	2,397	41,293	1,746,752	42.3	---	5/1,343,725	5/10,561	3.87	5/409
1961--	1,395	---	2,448	42,558	1,867,469	43.9	28,649	1,280,785	10,796	3.87	418
1962--	1,436	---	2,472	42,034	1,958,355	46.6	32,794	1,531,826	11,032	3.86	426
1963--	1,441	---	2,516	41,937	2,006,534	47.8	35,378	1,674,803	11,286	3.85	434
1964--	1,420	---	2,474	40,670	2,010,144	49.4	35,689	1,746,475	11,685	3.83	447
1965--	1,424	---	2,439	40,075	2,087,581	52.1	35,604	1,821,252	11,976	3.82	457
1966--	1,418	---	2,378	38,879	2,058,592	52.9	34,886	1,852,533	12,127	3.81	462
1967--	1,344	---	2,319	37,683	2,098,919	55.7	34,515	1,890,024	12,307	3.80	468
1968--	1,318	---	2,304	36,869	2,131,929	57.8	(6/)	(6/)	(6/)	(6/)	---
1969--	1,289	---	2,250	35,617	2,138,953	60.1	---	---	---	---	---

1/ Number of associations and supervisors include all plans.

2/ Estimated.

3/ Date for collecting data changed in 1924 from July 1 to January 1.

4/ Prior to 1957 associations were counted on the basis of supervisor circuits.

5/ National testing year changed in 1960 to begin May 1. These values are averages of 1959 and 1961.

6/ Average production data were not available when this report was compiled.

TABLE 7.--Thirteen-year production summary: U.S. cows and Official DHI cows (1956-1968)

Year <sup>1/</sup>	U.S. report for all milk cows					Official DHI Plan			
	Milk cows	Milk produced	Production/cow			Cows	Production/cow		
			Milk	Milk fat	Milk fat		Milk	Milk fat	Milk fat
	Thousands	Mil. lb.	Pounds	Percent	Pounds	Number	Pounds	Percent	Pounds
1956-----	20,501	124,860	6,090	3.83	233	1,479,799	9,713	3.94	383
1957-----	19,774	124,628	6,303	3.81	240	1,548,884	9,894	3.93	389
1958-----	18,711	123,220	6,585	3.78	249	1,607,538	10,068	3.91	394
1959-----	17,901	121,989	6,815	3.76	256	1,746,752	10,327	3.88	401
1960-----	17,515	123,109	7,029	3.76	264	1,867,469	10,561	3.87	409
1961-----	17,243	125,707	7,290	3.74	273	1,958,355	10,796	3.87	418
1962-----	16,842	126,251	7,496	3.74	280	2,006,534	11,032	3.86	426
1963-----	16,260	125,202	7,700	3.71	286	2,010,144	11,286	3.85	434
1964-----	15,677	126,967	8,099	3.70	300	2,087,581	11,685	3.83	447
1965-----	14,954	124,173	8,304	3.70	307	2,058,592	11,976	3.82	457
1966-----	14,093	119,892	8,507	3.69	314	2,098,919	12,127	3.81	462
1967-----	13,501	118,769	8,797	3.69	325	2,131,929	12,307	3.80	468
1968-----	3/13,022	3/117,281	3/9,006	3.68	3/331	2,138,953	(4/)	----	(4/)

<sup>1/</sup> Based on succeeding January 1 reports of cows on test in the National Cooperative Dairy Herd Improvement Program.

<sup>2/</sup> National testing year changed in 1960 to begin May 1. These values are averages of 1959 and 1961.

<sup>3/</sup> Statistical Reporting Service (USDA), "Milk Production," January 1969. Data are preliminary.

<sup>4/</sup> Average production data were not available when this report was compiled.

TABLE 8.--Thirteen-year summary of the National Cooperative Dairy Herd Improvement Program: U.S. cows and DHIA cows (1956-1968)

Year <sup>1/</sup>	Official DHI Plan		Owner-Sampler Plan		Weigh-a-Day-a-Month Plan		Milk cows in U.S.	
	Cows on test	Proportion of U.S. cows	Cows on test	Proportion of U.S. cows	Cows on test	Proportion of U.S. cows	Cows <sup>2/</sup>	Proportion of U.S. cows
	Number	Percent	Number	Percent	Number	Percent	Thousands	Percent
1956-----	1,479,799	7.22	405,090	1.98	21,297	0.10	20,501	9.3
1957-----	1,548,884	7.83	490,001	2.48	79,489	.40	19,774	10.7
1958-----	1,607,538	8.59	549,916	2.94	74,814	.40	18,711	11.9
1959-----	1,746,752	9.76	615,899	3.44	76,392	.43	17,901	13.6
1960-----	1,867,469	10.66	655,885	3.74	70,847	.40	17,515	14.8
1961-----	1,958,355	11.36	698,302	4.05	70,617	.41	17,243	15.8
1962-----	2,006,534	11.91	726,478	4.31	50,492	.30	16,842	16.5
1963-----	2,010,144	12.36	752,229	4.63	60,149	.37	16,260	17.4
1964-----	2,087,581	13.32	818,406	5.22	56,570	.36	15,677	18.9
1965-----	2,058,592	13.77	839,838	5.62	56,957	.38	14,954	19.8
1966-----	2,098,919	14.89	825,127	5.85	53,429	.38	14,093	21.1
1967-----	2,131,929	15.76	847,485	6.27	48,853	.36	13,501	22.4
1968-----	2,138,953	16.43	842,330	6.47	44,131	.34	13,022	23.2

<sup>1/</sup> Based on succeeding January 1 reports of cows on test in the National Cooperative Dairy Herd Improvement program.

<sup>2/</sup> Average number of milk cows on farms during year, excluding heifers not yet fresh; estimated by the Statistical Reporting Service (USDA).

TABLE 9.--Counties, by State, with 40 percent or more cows included in the National Cooperative Dairy Herd Improvement Program--January 1, 1969  
 (Numerals in parentheses at the end of county listing show the percentage of the States' counties that have 25 percent or more of their cows on test.)

State and county	Cows enrolled in DHIA plans	State and county	Cows enrolled in DHIA plans	State and county	Cows enrolled in DHIA plans
	Percent		Percent		Percent
ALABAMA		FLORIDA (contd.)		KANSAS (contd.)	
Russell-----	70	Citrus-----	72	Chase-----	53
Etowah-----	58	Indian River-----	66	Reno-----	51
Elmore-----	57	Jackson-----	63	Comanche-----	49
Montgomery-----	48	Leon-----	62	Harper-----	49
Talladega-----	43	Union-----	57	Seward-----	47
(15%)		Orange-----	55	Saline-----	46
ALASKA		Jefferson-----	53	Harvey-----	42
(50%)		Sumter-----	50	(23%)	
ARIZONA		Washington-----	44	LOUISIANA	
Cochise-----	100	Pinellas-----	41	West Feliciana-----	68
Pima-----	100	Manatee-----	40	Morehouse-----	56
Pinal-----	100	(30%)		Richland-----	50
Graham-----	80	GEORGIA		West Carroll-----	44
Maricopa-----	40	Douglas-----	95	(19%)	
(36%)		Echols-----	95	MAINE	
ARKANSAS		Houston-----	83	Oxford-----	49
Miller-----	50	Peach-----	80	Androscoggin-----	40
(3%)		Macon-----	79	(44%)	
CALIFORNIA		Dooly-----	78	MARYLAND	
Alameda-----	100	Mitchell-----	76	Dorchester-----	45
Tehama-----	95	Jeff Davis-----	75	(33%)	
Ventura-----	84	Newton-----	68	MASSACHUSETTS	
Marin-----	81	Clarke-----	66	Barnstable-----	76
Madera-----	76	Clayton-----	64	Hampshire-----	42
Monterey-----	76	Burke-----	63	(50%)	
Contra Costa-----	73	Coffee-----	63	MICHIGAN	
Placer-----	66	Jefferson-----	63	Kalamazoo-----	52
San Joaquin-----	66	Fayette-----	56	Barry-----	51
Yolo-----	65	Walton-----	53	Missaukee-----	51
Kern-----	63	Stewart-----	50	Jackson-----	49
San Luis Obispo-----	61	Butts-----	48	Calhoun-----	48
Fresno-----	60	Carroll-----	48	Clinton-----	43
San Diego-----	59	Dekalb-----	48	Hillsdale-----	43
Santa Barbara-----	59	Lee-----	48	Ingham-----	43
Napa-----	58	McDuffie-----	48	Lake-----	42
Stanislaus-----	57	Rockdale-----	48	Shiawassee-----	41
Sonoma-----	55	Tattnall-----	48	(42%)	
Sacramento-----	54	Dougherty-----	45	MINNESOTA	
San Benito-----	52	Thomas-----	45	Ramsey-----	68
Santa Cruz-----	50	Lamar-----	44	(16%)	
Kings-----	49	Brooks-----	42	MONTANA	
Merced-----	49	Schley-----	42	(2%)	
Sutter-----	49	Jones-----	40	NEBRASKA	
Tulare-----	48	(26%)		(6%)	
San Bernardino-----	43	HAWAII		NEVADA	
Yuba-----	43	Maui-----	83	Clark-----	88
Colusa-----	40	Hawai-----	42	Douglas-----	65
Shasta-----	40	(60%)		(24%)	
(67%)		ILLINOIS		NEW HAMPSHIRE	
CONNECTICUT		Lawrence-----	62	Sullivan-----	49
Tolland-----	63	Champaign-----	54	(80%)	
Litchfield-----	55	Monroe-----	53	NEW JERSEY	
Hartford-----	49	Bond-----	44	Burlington-----	63
Windham-----	46	(21%)		Middlesex-----	63
New Haven-----	40	INDIANA		Somerset-----	46
New London-----	40	(12%)		(38%)	
(100%)		IOWA		NEW MEXICO	
DELAWARE		Dallas-----	59	Dona Ana-----	64
Sussex-----	48	Story-----	49	Sierra-----	61
(67%)		Webster-----	48		
FLORIDA		(24%)			
St. Johns-----	93	KANSAS			
Gilchrist-----	79	Pawnee-----	67		
Seminole-----	78	Meade-----	65		
		Finney-----	63		

TABLE 9.--Counties, by State, with 40 percent or more cows included in the National Cooperative Dairy Herd Improvement Program--January 1, 1969--Continued

State and county	Cows enrolled in DHIA plans	State and county	Cows enrolled in DHIA plans	State and county	Cows enrolled in DHIA plans
	Percent		Percent		Percent
NEW MEXICO (contd.)		PENNSYLVANIA		VIRGINIA (contd.)	
Otero-----	45	Montgomery-----	53	Gloucester-----	48
(16%)		Blair-----	51	Chas. City & New Kent-----	47
NEW YORK		Lancaster-----	48	Pulaski-----	47
Columbia-----	48	Sullivan-----	46	Clarke-----	46
Dutchess-----	47	Huntingdon-----	41	Orange-----	46
Long Island-----	46	Mifflin-----	41	Powhatan-----	46
Tompkins-----	46	Juniata-----	40	City of Chesapeake-----	44
Broome-----	40	(63%)		Nansemond-----	44
(40%)		RHODE ISLAND		Rockingham-----	43
NORTH CAROLINA		(20%)		Augusta-----	42
Carteret-----	100	SOUTH CAROLINA		Charlotte-----	42
New Hanover-----	100	Colleton-----	79	Spotsylvania-----	41
Scotland-----	100	Sumter-----	77	Brunswick-----	40
Swain-----	100	Kershaw-----	74	Fairfax-----	40
Richmond-----	97	Bamberg-----	73	Loudoun-----	40
Hyde-----	88	Jasper-----	71	Roanoke-----	40
Jones-----	75	Lee-----	66	(44%)	
Pitt-----	75	Orangeburg-----	63	WASHINGTON	
Caswell-----	69	Hampton-----	62	Walla Walla-----	56
Lenoir-----	69	Newberry-----	59	Klickitat-----	50
Robeson-----	69	Marlboro-----	56	Wahkiakum-----	45
Beaufort-----	68	Saluda-----	56	Kittitas-----	44
Columbus-----	68	Darlington-----	51	Asotin-----	42
Gaston-----	65	Calhoun-----	50	(38%)	
Wake-----	64	Greenville-----	46	WEST VIRGINIA	
Johnston-----	61	Beaufort-----	45	(4%)	
Franklin-----	60	Laurens-----	45	WISCONSIN	
Warren-----	58	Barnwell-----	44	Kenosha-----	48
Brunswick-----	56	(48%)		Winnebago-----	45
Bertie-----	55	TEXAS		(42%)	
Hoke-----	55	Deaf Smith-----	75		
Nash-----	55	Willacy-----	66		
Macon-----	54	Burleson-----	65		
Bladen-----	53	Starr-----	65		
Halifax-----	53	El Paso-----	52		
Guildford-----	52	San Patricio-----	50		
Onslow-----	49	(7%)			
Orange-----	46	UTAH			
Randolph-----	46	Salt Lake-----	56		
Montgomery-----	45	Wasatch-----	54		
Washington-----	45	Summit-----	46		
Pender-----	44	Washington-----	44		
Craven-----	43	Davis-----	43		
Person-----	43	(48%)			
Durham-----	42	VERMONT			
Granville-----	42	Bennington-----	46		
Cherokee-----	41	Windsor-----	45		
Cumberland-----	41	Washington-----	40		
(59%)		(79%)			
OHIO		VIRGINIA			
Marion-----	56	James City-----	79		
Erie-----	47	Lancaster-----	69		
Hamilton-----	47	Henrico-----	59		
Wayne-----	42	City of Virginia Beach-----	56		
Lorain-----	41	Culpeper-----	53		
(48%)		Madison-----	52		
OREGON		Hanover-----	49		
Benton-----	45				
(31%)					

TABLE 10.--Lactation records received in 1968 1/

State	Official DHI cows on test 1-1-68	1968 production records					1967 production records	
		Punched (1095 cards)	Magnetic tape	Total	Proportion of cows enrolled in Official DHI		Total	Proportion of cows enrolled in Official DHI
					Number	Percent 2/		
Ala-----	32,105	1	25,732	25,733	80.2	30,116	97.7	
Alaska----	196	----	170	170	86.7	208	126.1	
Ariz-----	14,305	221	6,543	6,764	47.3	5,645	34.1	
Ark-----	4,375	----	4,080	4,080	93.3	4,467	117.6	
Calif----	371,229	9,908	55,223	65,131	17.5	75,359	20.8	
Colo-----	19,269	266	8,447	8,713	45.2	8,008	56.2	
Conn-----	22,677	----	32,122	32,122	141.7	23,460	103.4	
Del-----	4,236	----	6,145	6,145	145.1	4,407	98.8	
Fla-----	21,078	----	16,855	16,855	80.0	20,663	102.9	
Ga-----	31,118	----	27,149	27,149	87.2	35,357	113.6	
Hawaii----	4,322	----	3,941	3,941	91.2	3,215	71.8	
Idaho----	22,488	7	24,708	24,715	109.9	27,270	88.8	
Ill-----	58,034	29,729	41,311	71,040	122.4	60,275	98.2	
Ind-----	43,759	5	42,051	42,056	96.1	47,198	109.4	
Iowa-----	60,756	----	58,356	58,356	96.0	69,363	116.6	
Kans-----	38,162	----	37,493	37,493	98.2	42,208	119.5	
Ky-----	23,497	6	19,425	19,431	82.7	23,036	104.5	
La-----	8,356	----	6,534	6,534	78.2	6,828	91.2	
Maine-----	18,782	----	26,670	26,670	142.0	18,866	105.7	
Md-----	41,714	4,874	33,488	38,362	92.0	42,913	107.0	
Mass-----	20,030	----	28,114	28,114	140.4	21,441	101.3	
Mich-----	78,058	17	66,902	66,919	85.7	80,196	98.6	
Minn-----	119,023	1	120,900	120,901	101.6	130,027	106.4	
Miss-----	21,888	8	17,702	17,710	80.9	18,623	99.6	
Mo-----	26,212	----	25,508	25,508	97.3	26,838	111.8	
Mont-----	4,316	62	1,943	2,005	46.5	2,487	73.6	
Nebr-----	18,796	----	17,943	17,943	95.5	18,529	111.0	
Nev-----	6,380	61	1,674	1,735	27.2	1,744	27.1	
N. H-----	13,014	----	18,336	18,336	140.9	13,006	105.5	
N. J-----	23,992	----	34,273	34,273	142.9	25,315	100.3	
N. Mex-----	6,916	143	6,200	6,343	91.7	5,810	93.0	
N. Y-----	186,511	----	276,640	276,640	148.3	186,679	102.7	
N. C-----	49,901	10	43,780	43,790	87.8	50,296	105.5	
N. Dak-----	5,902	----	5,033	5,033	85.3	6,074	99.6	
Ohio-----	90,978	8	88,827	88,835	97.6	96,775	106.5	
Okla-----	17,010	----	16,786	16,786	98.7	16,363	115.5	
Oreg-----	24,195	----	25,731	25,731	106.3	24,048	91.4	
Pa-----	178,203	9	203,099	203,108	114.0	167,820	93.4	
P. R-----	820	----	-----	-----	-----	-----	-----	
R. I-----	2,230	----	2,928	2,928	131.3	2,115	96.5	
S. C-----	26,391	1	22,200	22,201	84.1	24,637	99.0	
S. Dak-----	5,604	----	5,985	5,985	106.8	6,991	105.1	
Tenn-----	31,011	7	26,346	26,353	85.0	31,495	103.5	
Tex-----	32,476	11	27,445	27,456	84.5	29,829	102.7	
Utah-----	21,107	527	18,475	19,002	90.0	18,704	92.1	
Vt-----	39,121	----	58,010	58,010	148.3	38,751	99.2	
Va-----	62,956	4	55,803	55,807	88.6	63,535	107.6	
Wash-----	37,248	----	44,209	44,209	118.7	43,275	116.8	
W. Va-----	8,367	----	12,241	12,241	146.3	8,500	96.7	
Wis-----	131,243	4	121,244	121,248	92.4	142,274	112.6	
Wyo-----	1,572	1	220	221	14.1	235	16.5	
U.S.-----	2,131,929	45,891	1,870,940	3/1,916,831	89.9	1,851,274	88.2	

1/ Lactation record input for May and September 1968, and January 1969 production runs.

2/ Percentages vary by State and may exceed 100 percent depending upon reporting and processing procedures in December and January of each year and year to year changes in reporting procedures.

3/ Does not include approximately 165,000 lactation records that were resubmitted from the Utah and Pennsylvania computing centers.

TABLE 11.--Eleven-year summary: Lactation records received by USDA

Year	Official DHI cows enrolled on January 1 of each year	Lactation records reported to USDA	Official DHI cows represented by records reported
	Number	Percent	
1958-----	1,548,884	786,496	51
1959-----	1,607,538	927,998	58
1960-----	1,746,752	886,495	51
1961-----	1,867,469	1,084,799	58
1962-----	1,958,355	1,211,407	62
1963-----	2,006,534	1,320,423	66
1964-----	2,010,144	1,437,959	72
1965-----	2,087,581	1,749,752	84
1966-----	2,058,592	1,788,974	87
1967-----	2,098,919	1,851,274	88
1968-----	2,131,929	1,916,831	90

TABLE 12.--Relative frequency of error conditions in lactation records rejected in preliminary edits in 1968 <sup>1/</sup>

Error conditions	Total error conditions <sup>2/</sup>	Percent of all error conditions <sup>2/</sup>
<u>Registered cows</u>		
Zero dam number-----	3,428	20.45
Zero sire number-----	3,120	18.61
Cow and dam breed unequal-----	1,868	11.14
Cow and sire breed unequal-----	1,584	9.45
"Eight" cow breed-----	1,076	6.42
Alpha sire number-----	316	1.88
Zero cow number-----	306	1.83
Alpha dam number-----	216	1.29
Alpha cow number-----	177	1.06
Eartag sire number-----	145	0.86
Zero cow breed-----	91	.54
Blank cow breed-----	7	.04
<u>Grade cows</u>		
"Non eight" eartag cow breed, unequal sire breed-----	484	2.89
Eartag cow breed "eight", "non eight" sire and dam equal-----	140	.84
<u>Registered or grade cows</u>		
Zero sire breed-----	2,020	12.05
Zero dam breed-----	648	3.87
Zero days in milk-----	510	3.04
Blanks in any position of record-----	462	2.76
Alpha in hi-order 2 positions of cow number-----	83	.50
Alpha in hi-order 2 positions of dam number-----	47	.28
Alpha in hi-order 2 positions of sire number-----	34	.20
Alpha "J" through "Z" in "Termination" code-----	2	.01
Total-----	16,764	100.00

<sup>1/</sup> Total lactation records in error = 10,562. Proportion of error conditions in the 1,916,831 lactation records processed is 0.87 percent.

<sup>2/</sup> Relative frequency of error conditions may be somewhat inflated due to the fact that both the Utah and Pennsylvania computing centers resubmitted approximately 165,000 lactation records during the year.

TABLE 13.--Relative frequency of Official DHI lactation record rejects in 1968, by reason for rejection

Reject code	Type of error	Total error conditions <u>1/</u>	Percent of all rejects <u>1/</u>	Percent of all records entered <u>1/</u> <u>2/</u>
F-----	Conflicting or questionable calving date-----	16,993	18.4	0.9
B-----	Conflicting or questionable birth date-----	15,822	17.1	.8
A-----	Conflict with previous information supplied-----	14,973	16.2	.8
C-----	Conflicting or questionable cow number-----	9,627	10.4	.5
D-----	Conflicting or questionable dam number-----	9,559	10.3	.5
S-----	Conflicting or questionable sire number-----	7,013	7.6	.4
J-----	Equal identification number for two or more of the animals in the pedigree-----	575	0.6	(3/)
I-----	Invalid characters - usually blanks or alphabetic-----	360	.4	(3/)
G-----	Invalid State code-----	319	.3	(3/)
E-----	Conflicting or questionable breed code-----	122	.1	(3/)
M-----	Conflicting or questionable milk, pounds-----	94	.1	(3/)
P-----	Conflicting or questionable percent fat-----	84	.1	(3/)
Q-----	Conflicting or questionable fat, pounds-----	60	.1	(3/)
N-----	Conflicting or questionable days in milk-----	8	(3/)	(3/)
L-----	Days milked 3X exceed days in milk-----	4	(3/)	(3/)
Pre-edit rejects <u>4/</u> -----		16,764	18.1	.9
Total-----		5/92,377	100.0	4.8

1/ Relative frequency of error conditions may be somewhat inflated due to the fact that both the Utah and Pennsylvania computing centers resubmitted approximately 165,000 lactation records during the year.

2/ The incoming lactation records = 1,916,831.

3/ Less than 0.05 percent.

4/ For breakdown of pre-edit rejects see table 12.

5/ A total of 73,959 records were rejected, but the higher number of error conditions indicate some records contained more than one wrong, questionable, or conflicting data item.

TABLE 14.--Rank of States in percentage of cows included  
in the program: Official DHI-OS-WADAM

State	Rank	State	Rank
	<u>Percent</u>		<u>Percent</u>
California-----	47.4	Rhode Island-----	23.6
Nevada-----	44.9	Alabama-----	23.2
South Carolina-----	41.1	New Mexico-----	23.2
Arizona-----	40.3	Illinois-----	23.0
Connecticut-----	39.8	Kansas-----	21.2
New Jersey-----	35.6	Indiana-----	20.7
New Hampshire-----	33.2	Colorado-----	19.7
Delaware-----	32.7	Minnesota-----	18.4
Massachusetts-----	31.8	Montana-----	18.3
Utah-----	31.1	West Virginia-----	17.4
Vermont-----	31.1	Iowa-----	17.1
Maine-----	30.8	Idaho-----	16.9
Hawaii-----	29.0	Florida-----	16.7
Alaska-----	28.8	Oklahoma-----	14.1
Virginia-----	28.7	Wyoming-----	12.6
North Carolina-----	28.2	Louisiana-----	12.3
Pennsylvania-----	27.6	Mississippi-----	11.7
Oregon-----	27.0	Nebraska-----	11.0
New York-----	26.9	South Dakota-----	10.0
Ohio-----	26.9	Tennessee-----	9.8
Michigan-----	26.8	Texas-----	9.8
Wisconsin-----	26.7	Missouri-----	9.7
Georgia-----	26.6	Arkansas-----	9.2
Maryland-----	26.1	Kentucky-----	7.2
Washington-----	23.8	North Dakota-----	4.8
		U.S-----	23.2

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